VALLEY WEATHER WIND

Winter/Spring 2004

National Weather Service
Omaha/Valley, Nebraska

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A Newsletter for Emergency Managers, Core Storm Spotters, Media, and Public Officials in Eastern Nebraska and Southwest Iowa

Comments and suggestions are always welcome. Your feedback is very important to us!

Please contact us by telephone, e-mail, or regular mail.

National Weather Service
6707 N 288th Street
Valley, Nebraska 68064

This publication also is available on-line at **http://www.crh.noaa.gov/oax/news/newsletter.pdf**

Chief Editors For This Issue:

Van DeWald / Cathy Zapotocny

Winter Preparedness, Spring Weather, Customer Service

by Steven Schurr, Meteorologist in Charge

We are deep into winter, and most areas have measured about half of their normal annual snowfall. Two storms, December 9th, 2003 and January 3rd-4th, 2004 produced nearly all the snow so far. Each created travel difficulties, and unfortunately traffic accidents. I want to encourage each resident of Eastern Nebraska and Western Iowa to plan ahead and be able and willing to adjust their schedule for adverse winter weather if necessary. If you know a snowstorm is coming, get shopping for necessities (like groceries and prescriptions) done before the storm hits. Snow forecasts are much more accurate than they were even 3 years ago. Adjust your activities to the forecast. Don't wait to react to dangerous conditions, and possibly put yourself and your loved ones in peril.

We are adding a minute or two of sunshine with each passing day, and the promise of warmer weather is just a few weeks away. We all look forward to crocus, hyacinths and daffodils revealing their spring colors. The season is also a time to prepare for severe thunderstorms and tornadoes. I encourage everyone to attend one of the "Spotter Training and Weather Safety" programs the NWS conducts primarily in March and April (class dates are listed later in the newsletter). Most counties will host a program for their storm spotters, and nearly all welcome the public to attend and learn more about severe weather of all types.

The Omaha NWS staff is constantly searching for ways to improve service to our customers. This year we plan to add applicable mileposts to severe weather warnings that include parts of Interstates 80 and 29. We also expect to establish a conference call procedure for contacting emergency managers, warnings points and other key customers when we expect an especially dangerous severe weather episode.

Do you have other ideas that might improve our service to you? Please share them with us. We are always eager to review, and implement when possible, suggestions from our customers.

Inside This Issue . . .

Upcoming Events of Interest

- Central Plains Severe Weather Symposium, Lincoln, Nebraska, March 20th, 2004
- National Weather Association Severe Weather Conference, Des Moines, Iowa, March 25-27, 2004
- Severe Weather Awareness Week, March 29—April 2, 2004

Winter Weather Reminders

by Van DeWald, Lead Meteorologist

Winter storms have the capability to completely immobilize entire states. Each year, dozens of Americans die due to exposure to cold, vehicle fatalities, and other winter weather hazards. A major winter storm can last for days, and can impact the region for weeks.

It's important to keep ahead of the storm by checking the Internet (http://www.crh.noaa.gov/oax) or by listening to NOAA Weather Radio or commercial media outlets for the latest winter storm warnings, watches, and advisories. Ideally, several days before a winter storm, we'll alert you to that possibility in our "Hazardous Weather Outlook". If conditions are ripe, we'll issue a "Winter Storm Watch", which may eventually transition into a "Winter Storm Warning" or a "Winter Weather Advisory". Below, you'll find a brief description of each product:

Hazardous Weather Outlook: Provides weather details when winter storm conditions are possible within the next 2 to 5 days. It's important to stay tuned for future updates as new information becomes available.

Winter Storm Watch: Issued when winter storm conditions are possible within the next 36 to 48 hours. Now is the time to begin taking preliminary action and increase your vigilance.

Winter Storm Warning: Issued when life-threatening winter storm conditions have already begun, or will begin within the next 6 to 24 hours. Act now!

Winter Weather Advisory: Issued when winter weather conditions are expected to cause significant inconvenience, but are not life threatening. Typically issued for winter weather within the next 6 to 12 hours.

During a winter storm, travel often becomes difficult, or even treacherous. Occasionally, travel is not recommended at all if dangerous conditions are expected. While in Nebraska or Iowa, you can obtain road report information by dialing 511 from any telephone. This is a valuable resource to motorists and will alert you to potentially dangerous driving conditions. Regional road report information can also be found on our website at: http://www.crh.noaa.gov/oax/winterwx/road.htm.

To keep you on your toes, we've included the following winter weather word jumble. While not difficult, it should make you think about some of the things that can affect you during the winter season.

Instructions: Unscramble each of the words below and use the circled letters to answer the final phrase at the bottom. You'll notice, we have included numbers below some of the letters to help you solve the final phrase. Hint: The final phrase is the name of an NWS winter weather safety brochure. Good Luck! Answers are on the bottom of page seven of the newsletter.

AHVYE SOWN (2, 11)

BIAZZRDL (4)

NIDW LCHIL

ANFOLSWL

BSTITROFE

CIE SOMRT (19)

SONLWPOW (8, 16)

ALKE FEETCF (13)

Winter Storms...

(2) (4) (8) (11) (13) (16) (19)

Two Snow Storms Affect Region

by Becky Adams, Student Cooperative Employment Program Participant

Many folks used their snow blowers twice in the last couple of months, on December 9th, 2003, and again January 3rd-4th, 2004. Snow storms moved through the warning area on both dates resulting in widely varying snowfall amounts, with totals up to 8-10 inches received in some locations.

The storm on December 9th consisted of two main swaths of precipitation. Snow began in north central Nebraska in the early evening of the 8th, and stretched eastward into northeast Nebraska by late evening. It continued to accumulate into the afternoon of December 9th, with depths reaching up to 6 inches near Hartington.

The early morning hours of the 9th saw rain enter southeast Nebraska and southwest Iowa. Freezing rain and freezing drizzle began to fall along Interstate 80 and the Platte River not long afterward before quickly changing to snow. In addition, winds gusted to more than 40 mph as snow continued to fall into the afternoon and evening of the 9th. Visibility in some locations dropped to one-quarter mile at times before the snowfall eventually waned before midnight. Average accumulations ranged from 3 to 7 inches, with up to 10 inches in Lincoln. Several power outages were reported in Omaha, Elkhorn, and Blair, and there were a number of traffic accidents. The power outages caused a few school closings on the 9th. It's unclear though if the power outages were a result of the inclement weather or some other malfunction.

Another snowstorm hit the region on January 3rd-4th. Snow bands began in southeast Nebraska and southwest Iowa during late afternoon of the 3rd, and slowly began to move north. Snow continued through the night of the 3rd and well into the afternoon of the 4th. Accumulation totals were largest along a line from Crete to Lincoln to Omaha to Glenwood, Iowa where 5 to 8 inches occurred. The next several days resulted in very cold temperatures with readings well below zero January 5th-7th, 2004.

Total snowfall amounts this season have been higher than over the same time period last year. Through mid January 2004, total snowfall in Omaha (at Eppley Airfield) was 13.4 inches, which is about 2.4 inches above normal. That is rather striking when compared to last year's value at this time of only 3.2 inches. Lincoln has recorded 12.1 inches of snow this season, about an inch above normal, which is much greater than the 3.7 inches received during this time last year. Norfolk on the other hand has observed lighter snowfall this season, reporting only 5.7 inches thus far, which is about 7.5 inches below normal. Last year at this time, Norfolk had recorded 7.6 inches.

As a side note, graphical storm-total snow accumulation maps are typically posted on our website after each event at http://www.crh.noaa.gov/oax/news/map.jpg.

Winter Storm Forecasting; How Well Did We Do in 2003?

By Rick Chermok, Lead Meteorologist

What constitutes a winter storm in this part of the country? Here at the NWS in Omaha/Valley we use the following criteria; 6 inches or more of snowfall in 12 hours, 8 inches or more in a 24 hours, or ice accumulations of a quarter of an inch or more in 12 hours. Since severe winter weather conditions can exist with lesser amounts of snow or ice than mentioned above, these numbers can be reduced somewhat if the snow and/or ice is accompanied by unusually strong winds causing significant blowing and drifting snow, very cold wind chills or other dangerous winter conditions.

That said, how did we do with our winter weather forecasting in 2003? There were a total of 4 "winter storms" (as defined above) that hit our forecast area in eastern Nebraska and southwest Iowa during the past year. We issued a total of 124 county warnings, 89 of which verified. Of the 89 that verified, 66 were preceded by a "Winter Storm Watch". There were 9 counties for which "winter storm" criteria were met but no warning was issued, although "Winter Weather Advisories" were in effect for those counties. These numbers indicate an accuracy (Probability of Detection or POD) of 91% and a False Alarm Ratio (FAR) of 28%. The average lead time for the warnings that verified was around 20.5 hours.

Total snowfall over the area for 2003 included 35 inches in Lincoln, 32 in Omaha and 26 inches in Norfolk. These amounts were generally around or a little above normal.

Snowfall and Snow Depth Measurement Tips

by Van DeWald, Lead Meteorologist

Obtaining accurate snowfall measurements isn't difficult if you follow a few simple guidelines. Often, it's hard to determine a representative snow depth, and measuring new snowfall on top of old snow can be challenging. To get started, you only need a common household ruler or yardstick, and a snow board, which could be made of a small piece of plywood or hard plastic. A white object works best.

First, you must find a good location for your snow board, one that is convenient, but in a location that is relatively flat and somewhat open, and away from buildings and trees. A clean sidewalk or open cement area where there is some protection from the wind is a good alternative to using a snow board. If placing the snow board on top of an existing snow pack, ensure that the top of the board remains flush with the old snow.

Before it snows, check to see that the snow board is swept clean. During or after the snow, simply take your ruler or yardstick and measure the snow on the board to the nearest tenth of an inch. Record the snowfall amount, and either sweep the board clean, or turn it over for the next measurement. Because of evaporation or drifting, the snow board may need to be adjusted or moved to a new location if necessary. Then, add up each of the incremental snowfall measurements to obtain the total amount of snow for this event.

For snow depth, find a location where the snow appears to be near its "average" depth. It's important to avoid drifts or valleys. Measure the depth with the ruler or yardstick at several locations (typically, ten measurements are taken) and use an average for the representative snow depth.

Obtaining accurate snowfall measurements can be a challenge. However, by following a standard approach, snowfall and snow depth observations can be fairly easy and result in consistent, valuable measurements. Now, bring on the snow!

For additional, detailed instructions on how to measure snow and snow depth, please visit

http://www.nws.noaa.gov/om/coop/Publications/snowguid.htm

The Cooperative Observer Program

By Terry Landsvork, Hydro Meteorological Technician

With all of the state-of-the-art technology associated with the modernization of the National Weather Service, there remains a program administered by the NWS that has remained virtually unchanged since its inception more than one hundred years ago. It is the Cooperative (Coop) Weather Observer Program with approximately 11,700 volunteer weather observers across the country recording daily temperature and precipitation data. Some observers also record or report additional information such as soil temperature, evaporation and wind information, agricultural data, water equivalent of snow on the ground, river stages, lake levels and atmospheric phenomena. Many cooperative stations in the United States have been collecting weather data from the same location for over 100 years.

The first extensive network of cooperative stations was set up as the result of an 1890 Act of Congress that established the Weather Bureau, but many of its stations began operation long before that time. John Campanius Holm's weather records, taken without the benefit of instruments in 1644 and 1645, were the earliest known observations in the United States. Subsequently many people, including George Washington, Thomas Jefferson, and Benjamin Franklin maintained weather records. Jefferson kept an almost unbroken record of weather observations between 1776 and 1816, and Washington took his last weather observation just a few days before he died.

Two of the most prestigious awards given to Coop Weather Observers are named after Jefferson and Holm. Because of its many decades of relatively stable operation, high station density, and high proportion of rural locations, the NWS Cooperative Network has been recognized as the most definitive source of information on U.S. climate

Cooperative Observer Program cont.

trends for temperature and precipitation. Cooperative Stations form the core of the U.S. Historical Climate Network (HCN) and the U.S. Reference Climate Network.

Equipment to gather this data is provided and maintained by the National Weather Service, and data forms are sent monthly to the National Climatic Data Center (NCDC) in Asheville, North Carolina. There, data is digitized, quality controlled, and archived. Volunteer weather observers regularly and conscientiously contribute their time so that their observations can provide the vital information needed. The data is invaluable and helps scientists to learn more about floods, droughts, and heat and cold waves which inevitably affect everyone. The data is also used in agricultural planning and assessment, engineering, environmental-impact studies, utilities planning, and even in litigation.

Many Cooperative Weather Observers report daily precipitation to River Forecast Centers in support of the National Weather Service Hydrology Program. At the Omaha/Valley office, we maintain more than one hundred stations across Eastern Nebraska and Southwest Iowa.

If you have Internet access, here's an interesting item. Computer generated NWS forecasts for Coop sites are available at http://www.nws.noaa.gov/mdl/synop/products.shtml. Go to Coop MOS Products and make a selection for short or long range forecasts. Then look for your 6 digit station number (i.e. 253050 would be Fremont, NE) to retrieve the forecast.

Prestigious Awards for Two Southeast Nebraska Cooperative Weather Observers

Recognizing almost 42 years of dedication, the National Weather Service named rural Table Rock, Nebraska residents Lloyd and Betty Vrtiska as 2003 recipients of the agency's Thomas Jefferson Award for outstanding service in the Cooperative Weather Observer Program. The award is the agency's most prestigious, and no more than 10 are presented annually to deserving cooperative weather observers around the country. Lloyd was also a 1990 recipient of the John Campanius Holm Award.

Recognizing 26 years of dedication, the National Weather Service named rural Auburn, Nebraska resident Daryl Obermeyer as a 2003 recipient of the John Campanius Holm Award for outstanding service in the Cooperative Weather Observer program. The award is the agency's second most prestigious, and no more than 25 are presented annually. Pictured on the left is Daryl receiving a 25 year length of service award, presented by HMT Terry Landsvork.

New Assistant Administrator for Weather Services Announced

In mid January 2004, Brigadier General (Ret) David L. Johnson was named the Director of the National Weather Service. Previously, General Johnson served as the U.S. Air Force Director of Weather, retiring four months ago following an exemplary 30-year career. As director, he was responsible for developing doctrine, policy and organizational structure to support global Air Force and Army operations. He succeeds Mr. Jack Kelly, who is now the Deputy Undersecretary of Commerce for Oceans and Atmosphere.

General Johnson feels "extremely fortunate and proud to be heading the National Weather Service as part of NOAA's team. This is an exciting time for weather, climate and hydrology," he said. "The investment of our nation and NOAA staff is already enormously significant, and I am eager to begin building on that with the dedicated talent at the National Weather Service and NOAA. America and all Americans have come to rely on daily timely, accurate, focused information, and I look forward to working closely with NOAA staff and existing and new partners to keep pace with evolving and fast accelerating national needs."

Preliminary Local Storm Reports

by Bryon Miller, Lead Meteorologist

Preliminary Local Storm Reports (LSRs) are one of the primary methods of communicating severe weather reports to local law enforcement, emergency managers, media, and the general public. LSRs follow a national standardized format. The Storm Prediction Center (SPC) uses this format to automate the decoding and posting of national text and graphical reports in both hourly and daily formats. On December 16th, 2003, the LSR format changed. The new format includes the source of the report, has latitude and longitude coordinates, and the existing information has been rearranged.

The report will include the type of phenomenon, date and time of occurrence, location of the event, including the county and state, (and direction and distance from a city or town if necessary) the source of the report, latitude/longitude points, damage, deaths and/or injuries, and remarks to convey other noteworthy information.

LSRs are issued for severe weather events such as tornadoes, waterspouts, large hail, thunderstorm wind gusts, and flash floods. They may also be issued for other events such as blizzards, heavy snow, ice storms, non-thunderstorm winds, and lightning. Ideally, these reports will be issued as close to real time as possible. A "summary" LSR listing all events in reverse chronological order (newest events listed first) may be issued at the end of an event.

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PRELIMINARY LOCAL STORM REPORT
NATIONAL WEATHER SERVICE OMAHA NE
545 PM CST SUN JAN 4 2004

..TIME..     ...EVENT...      ...CITY LOCATION...       ...LAT.LON...
..DATE..     ....MAG....      ..COUNTY LOCATION...ST..  ...SOURCE....
             ..REMARKS..

0530 PM      HAIL             1 N ELKHORN               41.30N 96.24W
01/04/2004   0.75 INCH        DOUGLAS              NE   STORM SPOTTER

0520 PM      TSTM WND DMG     VALLEY                    41.31N 96.35W
01/04/2004                    DOUGLAS              NE   LAW ENFORCEMENT
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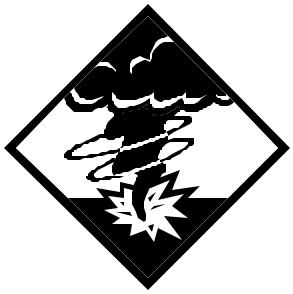
Is the LSR the final word on an event? By all means, no. LSRs are preliminary in nature (hence the name), therefore "official" severe weather reports are listed in monthly Storm Data publications, available from the National Climatic Data Center at http://www5.ncdc.noaa.gov/pubs/publications.html#SD. Or, you may search the database for individual reports at: http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwEvent~Storms.

2003 Tornado Statistics

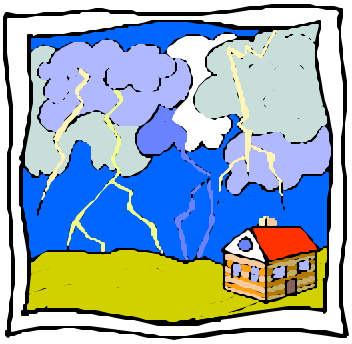
By Brian Smith, Warning Coordination Meteorologist



The tornado season was a normal one across our 38-county warning area in 2003. There were a total of 16 tornadoes reported, which was equal to the 30 year average as well. The first tornadoes occurred on May 4th when three weak, brief tornadoes touched down. However, 200 miles to the south, several large, destructive tornadoes struck the Kansas City area. Another brief tornado struck Holmesville, Nebraska on May 8th. In June, there were 7 tornadoes. The strongest, a three-quarter-mile wide F4 twister at its peak, struck Coleridge, Nebraska on the 23rd. This storm was on the ground for 13 miles, striking farmsteads and homes along the way. Unfortunately, this tornado also was responsible for the second Nebraska tornado death in 2003. The first tornado death ironically occurred the previous day in Deshler, Nebraska, which was the first tornado-related death in Nebraska since 1988. In July, there were 4 tornadoes. All four of these occurred on the 20th. These tornadoes caused minor damage, but were quite photogenic. Several different videos were taken of these twisters and will be featured in the upcoming spotter training this year. The remainder of the summer and the fall were quiet until November 17th, when a rare November tornado made a brief touchdown southwest of Weeping Water, Nebraska. This tornado was the first November tornado in Nebraska since 1956. In all, aside from the Coleridge tornado on June 23rd, most tornadoes were brief and weak.

Upcoming Severe Weather Season

By Brian Smith, Warning Coordination Meteorologist



Even though we're still in the midst of winter, severe weather is just around the corner. While severe weather can happen any time of year (tornadoes have been reported in Nebraska in every month except February), our peak severe weather season in this region is typically April through July.

Now is the time to begin focusing on severe weather awareness, and to start making plans for what to expect in coming months. Below, you'll find a listing of the "Spotter Training and Weather Safety" classes that we've scheduled so far. New classes are still being added, so be sure to check our website for future additions and exact class locations at http://www.crh.noaa.gov/oax/news/spotterssched.shtml. Also, be sure to keep an eye out for our spring severe weather newsletter which will be available on our website around April 1.

2004 Spotter Training and Weather Safety Classes

Date	Time	Location	Sponsor
February 21	10 AM	Syracuse, NE	Otoe Co. EMA
March 1	7 PM	Howells, NE	Colfax Co. EMA
March 9	7 PM	Logan, IA	Harrison Co. EMA
March 10	7 PM	Blue Springs, NE	Gage Co. EMA
March 11	7 PM	Fremont, NE	Region 5-6 EMA
March 16	7 PM	Wahoo, NE	Region 5-6 EMA
March 16	7 PM	Weeping Water, NE	Cass Co. EMA
March 17	7 PM	Columbus, NE	Platte Co. EMA
March 20	1 PM	Lincoln, NE	Lancaster Co. EMA
March 22	7 PM	Creighton, NE	Knox Co. EMA
March 23	7 PM	Mills County, IA	Mills Co. EMA
March 23	7 PM	Panama, IA	Shelby Co. EMA
March 24	1 PM/7 PM	Bellevue, NE	Sarpy Co. EMA
March 25	7 PM	Fairbury, NE	Jefferson Co. EMA
March 25	730 PM	Omaha, NE	Heartland REACT
March 28	130 PM	Saline Center, HWY 15	Saline Co. EMA
March 30	7 PM	Burt County	Region 5-6 EMA
April 1	7 PM	Coleridge, NE	Cedar Co. EMA
April 6	7 PM	Washington County	Region 5-6 EMA
April 9	7 PM	Pilger, NE	Stanton Co. EMA

The classes are typically less than two hours in length and provide a basic understanding of thunderstorm structure and severe storm spotting techniques. Severe weather safety will also be covered, and proper reporting procedures and associated policies will be addressed. Ample opportunity is provided for feedback and questions if they arise. You may attend any class that is convenient for you, and there is no need to pre-register, simply show up and enjoy the presentation!

We thank you for your time and commitment, and appreciate your willingness to help serve the citizens of your communities!

Winter Weather Word Jumble Answers: heavy snow, blizzard, wind chill, snowfall, frostbite, ice storm, snowplow, lake effect. Final phrase, "Winter Storm...The Deceptive Killers"

Climatological Calendar

Climatological Data for October, November, and December 2003

Location	Month	Average	Departure	Rain / Snow	Departure	Highest	Lowest
Omaha	Oct	55.3°	+2.1°	1.43" / 0"	-0.78"	87° (19th)	28° (27th)
	Nov	37.9°	-0.1°	2.91" / 0.4"	+1.09"	71° (20th)	11° (24th)
	Dec	30.2°	+4.6°	0.84" / 6.8"	-0.08"	58° (27th)	6° (12th)
Lincoln	Oct	55.3°	+1.8°	1.35" / 0"	+0.67"	88° (19th)	28° (26th)
	Nov	37.8°	-0.3°	2.42" / 0.3"	+0.84"	73° (20th)	11° (24th)
	Dec	30.5°	+4.0°	0.52" / 6.8"	-0.34"	56° (27th)	-2° (12th)
Norfolk	Oct	54.7°	+3.7°	1.00" / T	-0.72"	89° (19th)	22° (26th)
	Nov	35.8°	+0.7°	1.03" / 1.5"	-0.41"	71° (19/20th)	2° (24th)
	Dec	30.0°	+6.3°	0.21" / 2.0"	-0.44"	56° (21st)	8° (11/12th)

Normal High/Low Temperatures

Location	Feb 1	Mar 1	Apr 1	May 1
Omaha	34/14	44/23	58/34	69/45
Lincoln	35/13	45/22	58/33	69/45
Norfolk	33/12	42/20	55/31	67/43

Outlook for February, March, and April 2004

The 90-day outlook issued December 18th for February, March, and April 2004 calls for below normal temperatures and below normal precipitation across Nebraska and Iowa. For additional details, please visit the Climate Prediction Center website at http://www.cpc.ncep.noaa.gov/.
Note: Year-end climate summaries may also be viewed on our website at http://www.crh.noaa.gov/oax.

Astronomical Calendar

Sunrise/Sunset (http://aa.usno.navy.mil/data/docs/RS_OneYear.html)

	Omaha		Lincoln		Norfolk		
Date	Sunrise	Sunset	Sunrise	Sunset	Sunrise	Sunset	Times are given in cst (Central Standard Time), and cdt (Central Daylight Time), as appropriate.
Feb 1	7:36 am cst	5:40 pm cst	7:37 am cst	5:44 pm cst	7:43 am cst	5:44 pm cst	
Mar 1	6:58 am cst	6:15 pm cst	7:00 am cst	6:18 pm cst	7:04 am cst	6:20 pm cst	
Apr 1	6:06 am cst	6:50 pm cst	6:09 am cst	6:52 pm cst	6:12 am cst	6:56 pm cst	
May 1	6:21 am cst	8:22 pm cdt	6:25 am cdt	8:24 pm cdt	6:25 am cst	8:29 pm cst	

Moon Phases

New Moon	First Quarter	Full Moon	Last Quarter
Jan 21	Jan 29	Feb 6	Feb 13
Feb 20	Feb 28	Mar 6	Mar 13
Mar 20	Mar 28	Apr 5	Apr 12
Apr 19	Apr 27	May 4	May 11

Spring Equinox (Start of Spring):
March 20 at 12:49 am cst

Daylight Savings Time Begins:
Sunday, April 4th at 2:00 am local time - turn clocks ahead one hour.